

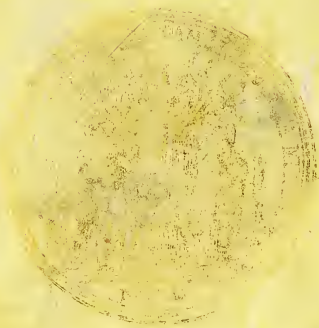
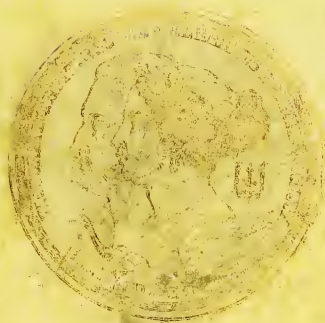
Ross & Thomson.

plain Answers
regarding
Photography

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A FEW
PLAIN ANSWERS
TO
COMMON QUESTIONS
REGARDING
PHOTOGRAPHY.

BY
ROSS AND THOMSON,
Photographers to Her Majesty,
90 PRINCE'S STREET, EDINBURGH.



M. DCCC. LIII.

EDINBURGH: PRINTED BY MACPHERSON & SYME,
12 ST DAVID STREET.

A FEW

PLAIN ANSWERS

TO

COMMON QUESTIONS

REGARDING

PHOTOGRAPHY.



QUESTION. What is the meaning of the word Photograph?

ANSWER. A picture taken by the action of light—*Photos* being the Greek word for light, and *graphein* to describe or draw.

Q. Are there more than one kind of Photographic pictures?

A. There are several, but only two have been brought into practical use,—the Daguerreotype, which has been used almost wholly for the taking of Portraits,—and the Talbotype,* which has been chiefly applied to the taking of Landscapes.

Q. How is a Daguerreotype likeness taken?

A. By light reflected from the sitter, and transmitted through an optical glass, called a lens, and received upon a prepared plate, inside of a darkened box (ordinarily termed a Camera-Obscura).

* Or Calotype.

Q. By what means is the Daguerreotype plate prepared, so that it will retain the image painted upon it?

A. The surface of the plate, which is pure silver (plated upon copper), being first highly polished, is coated with the vapours of Iodine and Bromine, which impart to it the property of being exceedingly sensitive to light ; so much so, that the comparatively small portion of light which is reflected from the sitter, even in a room, is sufficient in a few seconds to impress the image. Of course the more direct and powerful the light that falls on the sitter, the more rapidly will the image be impressed.

Q. Can the image thus formed be seen while the process is going on ?

A. No : for although the picture is upon the metal, it is quite invisible till exposed to the vapour of mercury, which having great attraction for silver, rests in beautiful and proportional gradation upon all the parts where the iodine and bromine have been driven off by the light. Thus the mercury forms the lights of the picture, and the bare silver plate the shadows.

Q. Does the mere action of light force the iodine and bromine away from the surface of the plate ?

A. With a certain portion it does ; and it so neutralizes what remains, that the mercury adheres as well to the silver surface as if it were not there at all.

A mercury box can be so made, that the whole of the development may be seen going gradually on.

Q. When taken from the mercury, is it finished ?

A. One other process remains. In its existing state, light would in some degree affect it. To prevent this, the iodine and bromine are washed away, by means of hyposulphite of soda

and a solution of gold poured on and burned into it. This is technically called gilding, and, if properly done, not only improves the general appearance, but fixes permanently the picture.

Q. Is it really permanently fixed ? *

A. Yes ; it will last as long as it is kept properly glued up from the air,—not that the air wastes the picture away, but it tarnishes it exactly as it does any other kind of silver plate.

Q. Are they true likenesses ?

A. Yes ; truth is stamped upon them all. Yet some of them shew how disagreeable truth may, in some cases, be made to appear. The veriest tyro in painting, that ever tried his prentice hand upon the human face divine, probably never produced greater monstrosities than have occasionally been perpetrated by this art ; while, on the other hand, it has produced gems as sweet as Raphael ever painted. No ideal Madonna and Child can surpass a really good Daguerreotype of a Young Mother and her Baby. In short, the good are very good, while the bad are very bad.

Q. What is the cause of this difference, if every one who makes the art a profession uses the same kind of instrument and chemicals ?

A. The difference arises from a variety of causes:—1st, Because every Photographer has ideas wide apart from each other, of what constitutes excellence. What one man calls distinctness, another calls hardness ; softness with one is haziness with another. Agreeableness of expression is all and all with a few ; while a plate free of all markings of polishing bounds the ambition of many. But, 2dly, another and more important reason of the existing difference is, the placing of

* We have Daguerreotypes, taken eleven years ago, as fresh as the day they were done.

both the sitter and the lens. If the lens be placed too high, the upper portion of the face will be too large in proportion to the under ; or, if too low, *vice versa* ; in either case causing distortion. Besides all this, every Photographer's room is lighted on the most opposite principles. If the light comes too much from one side, it makes the shadows too black ; if from the front, it makes the face flat, for want of shadows, and is apt to spoil the eyes ; if lighted from the top alone, it makes the shadows under the eyes, nose, and lips, too long and dark, at the same time making the hair on the top of the head, although it should be black, perfectly white.

Q. Will a proper adjustment of the lens alone prevent the hands being too large, as they often are ?

A. Not as yet. Except the sitter keep them in a line with the face, they will still be too large ; or, if they were put further back than the head, they would be too small. The great improvement even now required in the Daguerreotype, is an increase of sensitiveness. Whenever this takes place, a lens of a different construction can be used, which will almost wholly overcome the enlargement of the near parts, and the diminishing of the distant.

Q. Does it give colours in true proportion to each other ?

A. Not quite. Blue, for instance, in its photographic results, comes out rather too light ; hence blue eyes, except they reflect something dark, are always too pale. Yellow, again, comes out too dark, which is the reason that fair hair, without proper management, appears of a deeper shade than it should be. Anything red or green likewise comes out a little too dark. White acts very quickly, so much so, that the white parts of a dress always look confused, from these being overdone long before the dark parts are done at all. Thus, if in-

stead of pure white, the lace, &c. of ladies' dresses were slightly coloured, the whites in the picture would appear pure.

Q. What colour of dress is best ?

A. On the whole, decidedly dark. It may, however, be any colour ; but if the dress be too light, the face and hands will look dingy.

Q. What kind of a day is best ?

A. A clear day is necessary, but not sunshine, except perhaps for children, with whom great rapidity of execution is required.

Q. Can three Pictures be taken with the real colours ?

A. No, not yet ; though scientific persons think this probable, and some approaches have been made to it ; but, in the meantime, they can be coloured by an artist, a process of colouring having been adapted for the purpose, which materially heightens the effect.

Q. Why is it generally necessary to take more than one Picture ?

A. Not altogether but mainly, that there may be a chance of getting one picture where the sitters have forgotten that they were sitting for their portraits. When this is the case the expression is natural and not assumed.



Q. How is a Talbotype likeness taken ?

A. By exactly the same sort of instrument as the Daguerreotype ; but, instead of metal, they are taken on glass, coated with a preparation of gun cotton and ether, called Collodion. This is the most recent improvement in Talbotype ; and, although far from being perfect, is well adapted for small pictures, even in its present condition.

Q. How is the picture or image impressed upon the Collodion ?

A. The Collodion having combined with it a small proportion of iodide of potassium, is poured as evenly as possible upon the glass, and, when partly dry, is dipped into a solution of nitrate of silver, having thirty grains to the ounce of water. This is placed in the camera, in the ordinary frame, and in much the same time as the Daguerreotype the image will be impressed. Like it, it is also invisible at first. Instead, however, of being developed with mercury, it is put into a bath of weak pyrogallic acid, with a little acetic acid added, when immediately it begins to appear, but exactly the reverse of what it should be, the black parts remaining light, and the white parts becoming dark. When fully developed, it is fixed by pouring hyposulphite of soda on the surface, which is again washed off with water ; and this finishes what is called the negative proof. From this many copies can be taken, as mentioned in the answer to the next question.

Q. How are these copies taken ?

A. They are taken upon paper prepared for the purpose, first by being brushed over with a solution of common salt, ten or twelve grains to the ounce of water. This being dry, is again brushed or floated over with nitrate of silver, sixty grains to the ounce of water. Both being dry, the negative is laid down with its face upon the prepared side of the paper, and, by means of a board with screws, and a plate of thick glass, these are pressed closely together, and left either in sunshine or clear daylight. The result is, that the light gradually darkens those parts where the negative is light, while the dark portions prevent the light from penetrating through them, and they of course remain white on the paper, or com-

paratively white, according to the depth of tone of the negative.

Q. How is it known when a picture from the negative is sufficiently impressed on the paper?

A. The negative and the prepared paper can be wafered together at two corners, and lifted up and examined; but practice soon teaches the requisite time without this, always keeping in view that the picture should be allowed rather to be overdone, in order to make allowance for the effect of the chemical agents which are employed in fixing it.

Q. When printed, does it require fixing, as well as the negative?

A. Yes; if not fixed, it would soon get all dark together. After being washed in water, it is put into a bath of hyposulphite of soda, which takes up all the silver that has not been darkened by the light, leaving the dark parts which form the picture unaffected.

Q. Does this entirely fix it?

A. No; it can be only termed half fixed in this state. It cannot darken any more; but if the hyposulphite of soda is not got quite out of the paper, it will, in a very short time, eat out the picture itself. The only way a complete fixing can be effected, is by a simple, yet, when there are many to do, a very laborious process, viz. by repeated washings in hot and cold water, till every particle of the size be dissolved out of the paper. Thus all remains of hyposulphite are carried away with the size, and the fixing is now finished. The pictures should be dried with clean blotting paper, or a soft towel.

Q. Is the Talbotype in any way superior to the Daguerreotype?

A. In one thing only it is superior: it is better seen, not

having the metallic reflection which the silver plate still has in a small degree. But again, it is not nearly so delicate and soft ; it requires a stronger light for the process, and consequently makes the shadows so dark, that it is altogether as yet unfit for a lady's portrait, although it does very well for gentlemen. Some such substance as paper, but having a far finer texture, has yet to be discovered, before they can equal the Daguerreotype in fineness.

Q. Do they last as well as the Daguerreotype ?

A. If carefully done, dark impressions will last well, provided they be kept from damp.

Q. Is there any other substance except Collodion upon which Talbotype pictures are taken ?

A. Yes ; Albumen (the white of an egg), which is a better material for landscapes, although it is not sensitive enough for the taking of portraits.

Q. How is the albumen prepared ?

A. The white of eggs, having twelve drops of saturated *saturated* iodide of potassium added to each egg, is beat up into a large mass of froth, and allowed to stand for ten or twelve hours till it falls into a liquid. *and strained through muslin*

Q. How is this spread upon the glass ?

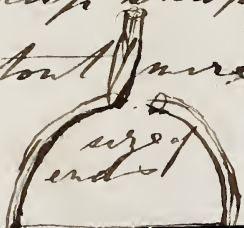
A. By a very simple method, invented by an amateur.* It is exactly on the principle of a roasting-jack, the glass plate being hooked by two opposite corners with a piece of bent wire, to which is attached a worsted thread. The albumen is poured plentifully on the surface (which must be very clean), and when all is covered, the glass is turned gently over, and

* Mr William M'Craw, who we are glad to see has just received from the Royal Society of Arts a Silver Medal, for an improved Camera.

To the whites of every three eggs
add half an eggshell of water
The solution of Iodide is made
by adding about 25 drops of
water to 60 grains of Iodide
there should always be some
Iodide left undissolved

To clean the plates Spirit
of Wine two parts Hartshorn one
part - rubbed on with cotton wool
and dried off with a soft towel
or tablecloth spread in several
folds along the table - by
having a Satta percha handle
stuck on the back you can

after meeting with the Sp^{ee} quickly
reverse it upon the cloth and
polish with circular strokes
~~from one~~ beginning at one end
& finishing at the other - then clean
of any fibres with a piece of silk
then still retaining the handle
pour on the prepared albumen
allow it to spread & pour off
the excess but do not draw
it - as it is better to let part
go off in the revolving - then
quickly reverse it and hook
the opposite corners into the
stump shaped ends of a piece
of stout wire



then remove it rather smartly
~~near~~ near or partly over a brisk
fire - a plate of metal heated
by gas jets would be more
convenient

Before dipping into the silver
bath on the prepared side
until the crack disappears
they told me to add one twelfth
of Acetic Acid - the proportions
in the book are better I think
but have not tried them yet
The plates may be used when
dry - but will then require
double the time at least



made to revolve, at a moderate rate, before a clear fire. When the albumen begins to crack at the edges, it is withdrawn from the fire, when these minute cracks will appear over the whole. It will keep any time in this state. *x gradually*

Q. Does it require any further preparation?

A. Yes: before being put in the camera, it is dipped in nitrate of silver, seventy grains to the ounce of water, having a twentieth part in quantity of strong acetic acid mixed with it. Immediately after being dipped in this, it is washed in water once or twice, and, before being dry, the picture can be taken upon it. If the object is a light one, four minutes will be sufficient to impress the image; but anything red or green will take longer.

Q. How is it developed?

A. By pouring a saturated solution of gallic acid upon the prepared side and spreading it with a piece of cotton wool. The picture will then appear slowly and gradually of a reddish colour; when brought up as far as it will come a little of the silver solution is mixed with gallic acid, and spread over it with a piece of clean cotton wool; the picture will now assume a darker and more vivid appearance, when it is fixed exactly as directed for the Collodion. *x it takes from half to two hours*

Q. Cannot the negatives be taken on prepared paper instead of glass?

A. Originally they were all done upon paper; but as the glass gives far more delicacy and detail, it is now substituted almost entirely for the paper, although, for powerful effect, nothing can surpass what has been done by the former mode. The very artistic and beautiful groups of the Newhaven Fishermen, taken by Mr D. O. Hill, and the late Mr Adamson, were all paper negatives, and to surpass them, in their own

peculiar excellence, would be impossible. In the history of Photography, the names of these gentlemen will ever stand in the first rank. Although not the discoverers, they were the founders of the Art in Scotland ; and there can be no doubt, had Mr Adamson been alive, and continued to pursue the art with Mr Hill, it would have been still nearer perfection than it is.

Q. Are the impressions taken from these in the same manner as from Collodion negatives ?

A. In the very same manner ; and this, it may be noticed, is an excellent mode of multiplying rare prints, drawings, leaves of plants, lace, feathers, &c. The print must be clean on the back and without paper-marks, and the first impression will be negative, the others from it again will, of course be correct. Many amateurs copy their own drawings in this way.

Q. Is not Photography better adapted for buildings and landscapes generally than for portraits ?

A. Unskilful hands will make a view as disagreeable to look upon as any portrait could be. When a building is taken too near, it is distorted just as the human face is when the camera is placed too near it.

Q. Is the art of Photography making any progress towards perfection ?

A. Popular patronage is the best answer to this question. Some four or five years ago, there were only two parties that took pictures by light in Edinburgh. There are now nine different establishments for that purpose ; and at one of these a number of assistants, at fair wages, are constantly employed. No one will deny that, in general, the specimens which are produced now are very superior to what they were a few years ago, and improvements have not ceased. Sir David Brewster

has recently discovered, that the smaller the lens the more perfect the picture. M. Niepce of St Victor has succeeded, to some extent, in taking objects in their natural colours, and although it may be long before anything practical result from this, yet he seems, according to the views of scientific men in France, to have solved the problem, and made an immense step in advance.

Q. What is a Stereoscopic Picture ?

A. Two Pictures of the same object, as seen with each eye, or taken at slightly different angles, are placed in an instrument with two magnifying semi-lenses, which unite them and give them the appearance of one Picture only, in the most natural relief. The Lenticular Stereoscope was invented by Sir David Brewster in 1844 ; it has been largely applied to portraiture, and one gentleman (John Stewart Esq. of Nateby Hall) has actually taken pictures of the ever-moving sea, which, when placed in this instrument, have the most magical effect.

Q. Why are all kinds of Photographic Pictures often merely black and white, having no gradations or half-tints ?

A. It requires some judgment ; by which to modify both the light on the sitter and the coating of the plates. A light too much concentrated makes the shadows very black, and overpowers the half-tints entirely. The same thing happens in taking a view wholly in sunshine ; it is better if the sun be behind a cloud during part of the time. In the Daguerreotype, if the plate be too lightly coated with the Iodine and Bromine, a Picture can be taken on it very rapidly ; but the shadows will be very black and the lights far too white, with no middle-tint at all. Too strong Nitrate of Silver has the same effect in Talbotype as too little Iodine and Bromine have in Da-

guerreotype. This difficulty has caused many of the Photographers on the Continent to print their Pictures on a tinted paper, thereby getting softness by a false mode, and at the same time completely destroying all appearance of air and distance.



The above Answers are as plainly and untechnically given as possible. They are not intended so much to teach Amateurs (there being abundance of books for that purpose already), as to tell those who are unacquainted with the subject, something of the theory and practice of the art, as it at present exists. In order to satisfy them that the Authors have sufficient practical knowledge to enable them to do so, the following Testimonials have been chosen from a mass of others.



TESTIMONIALS.

NO. I.

EXTRACT OF A LETTER FROM COLONEL HON. C. B.
PHIPPS TO SIR WILLIAM GIBSON-CRAIG.

WINDSOR CASTLE, February 4. 1852.

“ Prince Albert admires exceedingly the beautiful Photographs which you have sent him, by Ross and Thomson.”

NO. II.

FROM HER GRACE THE DUCHESS OF NORTHUMBER-
LAND TO SIR DAVID BREWSTER.

NORTHUMBERLAND HOUSE, March 18. 1852.

“ If you see Messrs Ross and Thomson, whom you recommended to us, perhaps you will be good enough to tell them, we are so well pleased with the Views they have made for us of Alnwick and Warkworth Castles, that by and bye, when the sun shines stronger, I shall probably point out a few more subjects which I wish to have taken.”

(The other Pictures have since been done.)

NO. III.

FROM SIR DAVID BREWSTER'S OPENING ADDRESS TO
THE BRITISH ASSOCIATION IN EDINBURGH, 1850.

"This new process has been brought to such perfection in this city by Messrs Ross and Thomson, that Talbotypes taken by them, and lately exhibited by myself to the National Institute of France, were universally regarded as the finest that had yet been executed." *

FROM SIR DAVID BREWSTER'S REVIEW OF HUNT'S
POETRY OF SCIENCE (NORTH BRITISH REVIEW,
VOL. XIII. 1851.)

"We have now before us specimens of Talbotype, by Messrs Ross and Thomson, Prince's Street, Edinburgh, which surpass every other Photographic Picture we have previously seen."

NO. IV.

FROM THE RIGHT HON. THE EARL OF ROSSE.

BIRR CASTLE, Oct. 11. 1852.

"Lord Rosse encloses Messrs Ross and Thomson a Post-Office order in payment of their account. He is very well satisfied with the Talbotypes sent."

* We cannot let this opportunity pass, without acknowledging the deep debt of gratitude we owe to Sir David Brewster,—a debt we can never repay. Whatever measure of success has attended our labours, is mainly to be attributed to his counsel and kindness.

NO. V.

FROM H. FOX TALBOT, ESQ., OF LACOCK ABBEY, WHO
DISCOVERED THE ART.

LACOCK ABBEY, Oct. 14. 1852.

“Your style of the art possesses many excellencies. You succeed better in the aërial perspective than any one I know.”

“The Monument of the Duke of Northumberland is one of the most perfect specimens I have seen.”

NO. VI.

FROM SIR JOHN WATSON GORDON, ROYAL ACADEMICIAN, AND PRESIDENT OF THE ROYAL SCOTTISH ACADEMY.

123 GEORGE STREET, Dec. 1. 1852.

“I very much admire the style and neatness of the execution of your Photographic Pictures, and I am much pleased with the advance you have made in that fascinating art.”

NO. VII.

FROM D. O. HILL, ESQ., SECRETARY TO THE ROYAL SCOTTISH ACADEMY.

CALTON HILL STAIRS, Nov. 26, 1852.

“With all my first love still and strong upon me for the paper negatives, the very imperfection of which, in my opinion, contributes at least a portion of the charm of the pictures printed from them, I am fully alive to the exquisite beauty and wonderful minutia of detail in the pictures procured from

the albumen and glass negatives,—a process which you have done so much to perfect.

“ I have also had the greatest satisfaction in observing the taste and skill with which your landscape and architectural subjects are selected, these being generally characterized by a judicious selection of the point of view, and what is so often wanting, an artistic apprehension of the value, and a skilful management in the bringing out of the middle-tints.

“ Some of the Daguerreotype Portraits and groups of figures which I have seen of your workmanship, are not only characterized by beautiful manipulation, but by correct expression and good pictorial arrangement. Your Picture of my friend Dr George Bell, I would peculiarly remark as combining these qualities.”

NO. VIII.

FROM GEORGE HARVEY, ESQ., ROYAL SCOTTISH
ACADEMICIAN.

15 BRUNSWICK STREET, NOV. 22. 1852.

“ It appears to me, that the best recommendation of your Photographic Pictures will be found to consist in their own excellence.”

NO. IX.

FROM JAMES GILES, ESQ. ROYAL SCOTTISH ACADE-
MICIAN.

64 BON ACCORD STREET, ABERDEEN, Aug. 24. 1852.

“ The small Picture of the Tomb is admirable ;—keeping it quiet by the admission of little light is treating it like an ar-

tist. The woody bank near Roslin, and Loch Katrine, are both most beautiful ; altogether, you are decidedly advancing rapidly in selection and treatment."

NO. X.

FROM J. D. HARDING, ESQ.

3 ABERCORN PLACE, LONDON, NOV. 14. 1852.

"Like many others, I have been very much struck with your production of Calotype Pictures on glass, and I am led to ask if you communicate your process ?"

NO. XI.

FROM THE LONDON ILLUSTRATED NEWS, AUG. 28.
1852.

"The most successful parties (with albumen) in this country are Messrs Ross and Thomson of Edinburgh, in whose views of that picturesque city we see realized the production of fine middle distances, and those half tones which it is so unusual to meet with in ordinary photographs."

NO. XII.

FROM THE ART JOURNAL, SEPT. 1850.

"A Series of Photographic Specimens from albumenised glass plates, were exhibited (at the British Association) by Messrs Ross and Thomson of Edinburgh, which were remarkable for the extreme sharpness of their outline, the minuteness of detail, and the charm of aërial perspective."

NO. XIII.

FROM THE REPORTS OF THE JURIES OF THE GREAT
EXHIBITION, 1851.

“ Ross and Thomson have exhibited several beautiful Talbotype Pictures, consisting of views from nature, interiors, groups, &c. ; and they are the only exhibitors in the British Section of Photographs by the albuminous process, which in practice they appear to have carried to a high state of perfection. * * * In addition to the extreme clearness observable in the details of their landscape scenery, and the great delicacy of their delineation of objects in general, we may take notice of the excessive beauty of the tints which their works exhibit. Not only are the shadows deep and Rembrandt-looking, where suitable to the effect required, but the middle distances display a beauty of colour nowhere equalled, excepting in the French department. * * * Indeed, the beautiful and extreme delicacy and variety of tint, the aerial perspective in which the background is made to recede by imperceptible gradations into the horizon,—all amply attest the powers of Messrs Ross and Thomson. A number of other Talbotypes, also exhibited, display equal variety of tint, and a depth and richness of tone, without any straining for effect.”

A COUNCIL MEDAL was awarded to MESSRS ROSS AND THOMSON.





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